CLAIMS

What is claimed is:

Sub A1

1. A method of rendering an image, comprising

generating a parametric texture map of a subject that contains at least one varying parameter in a set of varying parameters for an equation that defines variation in pixel color, without modeling geometric configurations, wherein each varying parameter in said equation corresponds to a varying condition.

2. The method of rendering an image as described in Claim 1, further comprising:

for every subpixel that is displayed for said image, interpolating a set of coefficients for said equation from data taken on said subject from a plurality of sample points taken over a range of conditions associated with said varying condition; and

for every subpixel that is displayed for said image, storing said set of coefficients that is interpolated in said parametric texture map.

3. The method of rendering an image as described in Claim 1, further comprising:

rendering said image by evaluating said equation for every subpixel that is displayed for said image for a given set of parameters in said set of varying parameters.

4. The method of rendering an image as described in Claim 1, further comprising:

displaying said subject in said image that is of two-dimensions.

5. The method of rendering an image as described in Claim 1, wherein said pixel color is taken from an RGB group of colors consisting of:

red;

green; and
blue.

6. The method of rendering an image as described in Claim 1, wherein said condition varies in time.

7. The method of rendering an image as described in Claim 1, wherein said condition varies in focus.

8. The method of rendering an image as described in Claim 1, wherein said condition varies in light direction.

9. The method of rendering an image as described in Claim 1, wherein said varying condition is a varying incidence angle that leads to color variation for Fresnel materials.

10. The method of rendering an image as described in Claim 1, further comprising:

generating said parametric texture map of said subject for a polynomial equation.

11. The method of rendering an image as described in Claim 1, further comprising:

generating said parametric texture map for said equation that defines variation in luminance per pixel; and

scaling fixed RGB values per pixel to define said variation in pixel color.

12. A method of rendering an image, comprising

generating a parametric texture map of a object that contains at least one varying parameter in a set of varying parameters for an equation that defines variation in pixel color wherein each varying parameter in said equation corresponds to a varying effect.

13. The method of rendering an image as described in Claim 12, further comprising:

for every texel that is displayed, interpolating a set of coefficients for said equation from data taken from a plurality of sample points on said object; and

for every texel that is displayed, storing said set of coefficients in said parametric texture map.

14. The method of rendering an image as described in Claim 12, further comprising:

rendering said image by evaluating said equation for a given set of parameters in said set of varying parameters.

15. The method of rendering an image as described in Claim 12, wherein said image of said object is displayed in two-dimensions.

16. The method of rendering an image as described in Claim 12, wherein said parametric texture map is generated for each color per pixel that is displayed for said image.

17. The method of rendering an image as described in Claim 12, wherein said pixel color is taken from an RGB group of colors consisting of:

red;

green; and

blue.

18. The method of rendering an image as described in Claim 12, wherein said effect varies in time.

19. The method of rendering an image as described in Claim 12, wherein said effect varies in focus.

20. The method of rendering an image as described in Claim 12, wherein said effect varies in light direction.

21. The method of rendering an image as described in Claim 12, wherein said effect is a Fresnel effect.

22. The method rendering an image as described in Claim 12, further comprising:

generating said parametric texture map of said object for a polynomial equation.

23. A computer system comprising:

a processor;

a display coupled to said processor;

a computer readable memory coupled to said processor and containing program instruction that, when executed, implement a method of rendering an image, comprising:

generating a parametric texture map of a subject that holds at least one varying parameter in a set of varying parameters for an equation that defines variation in pixel color, without modeling geometric configurations, wherein each varying parameter in said equation corresponds to a varying condition.

24. The computer system as described in Claim 23, wherein said method of rendering an image further comprises:

for every subpixel that is displayed for said image, interpolating a set of coefficients for said equation from data taken on said subject from a plurality of sample points taken over a range of conditions associated with said varying condition; and

for every subpixel that is displayed for said image, storing said set of coefficients that is interpolated in said parametric texture map.

25. The computer system as described in Claim 23, wherein said method of rendering an image further comprises:

rendering said image by evaluating said equation for every subpixel that is displayed for said image for a given set of parameters in said set of varying parameters.

26. The computer system as described in Claim 23, wherein said method of rendering an image further comprises:

displaying said subject in said image that is of two-dimensions.

27. The computer system as described in Claim 23, wherein said pixel color is taken from an RGB group of colors consisting of:

red;

green; and

blue.

28. The computer system as described in Claim 23, wherein said condition varies in time.

29. The computer system as described in Claim 23, wherein said condition varies in focus.

30. The computer system as described in Claim 23, wherein said condition varies in light direction.

31. The computer system as described in Claim 23, wherein said varying condition is a varying incidence angle that leads to color variation for Fresnel materials.

32. The computer system as described in Claim 23, wherein said method of rendering an image further comprises:

generating said parametric texture map of said subject for a polynomial equation.

33. The computer system as described in Claim 23, wherein said method of rendering an image further comprises:

generating said parametric texture map for said equation that defines variation in luminance per pixel; and

scaling fixed RGB values per pixel to define said variation in pixel color.

34. A computer-readable medium having a parametric map stored thereon for rendering an image of a subject, said parametric map comprising:

a set of coefficients for an equation that defines variation in a pixel color value, without modeling geometric configurations, for each subpixel that is displayed for said image.

35. The computer-readable medium as described in Claim 34, wherein said equation further comprises:

at least one varying parameter in a set of varying parameters, wherein each varying parameter in said equation corresponds to a varying condition.

36. The computer-readable medium as described in Claim 35, wherein said set of coefficients form fit said equation to a plurality of sample points taken over a range of conditions associated with said varying condition.

37. The computer-readable medium as described in Claim 35, wherein said condition varies in time.

38. The computer-readable medium as described in Claim 35, wherein said condition varies in focus.

39. The computer-readable medium as described in Claim 35, wherein said condition varies in light direction.

40. The computer-readable medium as described in Claim 34, wherein said pixel color value is taken from an RGB group of color values consisting of:

red;

green; and

blue.

41. The computer readable medium as described in Claim 34, wherein said equation is a polynomial equation.

42. A computer graphics system comprising:

a processor;

a display coupled to said processor;

a memory coupled to said processor, said memory having stored therein a parametric texture map holding at least one varying parameter in a set of varying parameters for an equation that defines variation in pixel color, without modeling geometric configurations, wherein each varying parameter in said equation corresponds to a varying condition.

43. The computer graphic system as described in Claim 42, wherein said parametric map further comprises:

for every subpixel that is displayed in said image, a set of coefficients that form fit said equation to a plurality of sample points taken over a range of conditions associated with said varying condition.

44. The computer graphics system as described in Claim 42, wherein said condition varies in time.

45. The computer graphics system as described in Claim 42, wherein said condition varies in focus.

46. The computer graphics system as described in Claim 42, wherein said condition varies in light direction.

47. The computer graphics system as described in Claim 42, wherein said pixel color is taken from an RGB group of colors consisting of:

red;

green; and

blue.

48. The computer graphics system as described in Claim 42, wherein said equation is a polynomial equation.

49. The computer graphics system as described in Claim 42, wherein said parametric texture map defines variation in luminance per pixel that is further scaled with fixed RGB values per pixel to define said variation in pixel color.